REMARKS

Claims 1, 3-9, 11-13, and 15-22 were pending. Claims 1, 6-8, and 13 have been amended. Claims 23-24 are new. Claims 1, 3-9, 11-13, 15-18, and 21-24 are pending.

Claims 1, 4-8, and 12 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Pat. No. 6,320,668 to Kim. Reconsideration of this rejection is respectfully requested.

Claim 1 recites an image correction method that includes, "obtaining expected signals for an image-rendering device of each of a plurality of known reference colors," "obtaining detected signals from an image sensor using a color image array, said detected signals being obtained for said plurality of known reference colors, said plurality of known reference colors including white, at least three primary colors, and at least two other non-primary colors," "determining an error measure for each of said plurality of known reference colors, said error measure representing a difference between said detected signals and said expected signals," "obtaining a color correction matrix by simultaneously minimizing each said respective error measure to obtain optimum overall correction for said plurality of known reference colors," and "applying said color correction matrix to an input image obtained using said image sensor with said color image array to provide color correction for each of said plurality of known reference colors to obtain a color-corrected image from said input image."

Kim discloses a color correction method that obtains a color correction matrix using a colorimetric scanner. The correction matrix contains differences between scanned colorimetric data and reference colorimetric data[1]. Kim does not teach or suggest an image correction method that includes "obtaining expected signals for an

image-rendering device of each of a plurality of known reference colors" and "determining an error measure...representing a difference between said detected signals and said expected signals." Claim 1 is not anticipated or rendered obvious by Kim. Claims 3-5, 15-16, and 21 depend from claim 1 and are patentable over Kim for at least the same reasons.

Claim 6 recites an image sensor apparatus comprising that includes "an image rendering device" and "an image sensor device, operating using a color filter array which provides color filtering such that colors transmitted to each pixel of a color image array of said image sensor device are converted to signals for all color components provided by said color filtering," and "an image processor, operating to color-correct images obtained by said image sensor device according to a color correction matrix obtained by simultaneously minimizing respective error measures." Each error measure represents "a difference between signals seen for a known reference color from said color image array of said image sensor device and signals expected to be seen for said reference color, said color correction matrix being obtained according to at least the color white, three primary colors, and at least two additional non-primary colors."

Kim discloses an image processor that includes a colorimetric scanner. Correction matrices represent differences between two sets of colorimetric data. Kim does not teach or suggest an image processor that produces a color correction that contains error measures that each represents "a difference between signals seen for a known reference color from said color image array of said image sensor device and signals expected to be seen for said reference color."

Claim 6 is patentable over Kim. Claims 7-8 and 12 depend directly or indirectly from claim 6 and are patentable over Kim for at least the same reasons.

Claim 6 is patentable over Kim. Claims 7-8 and 12 depend directly or indirectly from claim 6 and are patentable over Kim for at least the same reasons.

Claims 3, 9, 11, 13, 15-18, 21, and 22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kim in view of Japanese Pub. No. 02-074367 in the name of Yamaguchi. Applicant respectfully traverses this rejection.

Claims 3, 15, 16, and 21 depend directly or indirectly from claim 1. Claim 1 is patentable over Kim as discussed above. Yamaguchi has not been applied against claim 1. Even if Yamaguchi had been combined with Kim against claim 1, the deficiencies of Kim would not be overcome. Yamaguchi has been cited to provide weighting of important individual colors. Yamaguchi does not teach or suggest a modification to Kim that would produce an image correction method that involves "obtaining expected signals for an image-rendering device of each of a plurality of known reference colors" and "determining an error measure...representing a difference between said detected signals and said expected signals."

Claim 1, and its dependent claims 3, 15-16, and 21 are patentable over the proposed combination of Kim and Yamaguchi.

Claims 9, 11, 17, 18, and 22 depend directly or indirectly from claim 6. Claim 6 is patentable over Kim, as discussed above. Yamaguchi has not been cited against claim 6. Even if Yamaguchi had been combined with Kim against claim 6, the deficiencies of Kim would not be overcome. Yamaguchi has been cited as providing individual color weighting. Yamaguchi does not teach or suggest how to modify Kim to produce an image processor including a color correction that contains error measures that each represents "a difference between signals seen for a known reference color

Claim 6 and its dependent claims 9, 11, 17, 18, and 22 are patentable over Kim in view of Yamaguchi

Claim 13 recites a method of correcting an image from an image sensor comprising "getting signals expected to be seen for each of a plurality of known reference colors," "obtaining a color correction matrix...said color correction matrix being one which takes into account correction for at least the color white, three primary colors, and two other non-primary colors by simultaneously minimizing error measures relative to each color, wherein respective error measures for said non-primary colors are weighted such that said correction matrix corrects for some of said non-primary colors more than said primary colors, each error measure representing a difference between signals actually seen for a known reference color from [a] color image array and said signals expected to be seen for each of said reference outputs," and "applying said color correction matrix to obtain a subjectively color-corrected and white-balanced image directly from an input image obtained using said color image array."

Kim discloses a system that relies on colorimetric data to obtain precisely color-corrected images. Kim does not teach or suggest "getting signals expected to be seen for each of a plurality of known reference colors," or applying a "color correction matrix to obtain a *subjectively* color-corrected and white-balanced image directly from an input image obtained using said color image array." Yamaguchi, cited as providing color weighting, does not cure the deficiencies of Kim. Yamaguchi does not teach or suggest how to modify Kim to produce a method of color correction that includes "getting signals expected to be seen for each of a plurality of known reference colors" and applying a "color correction matrix to obtain a *subjectively* color-corrected and white-balanced image directly from an input image obtained using said color image array." As noted above, Kim relies on colorimetric data. The proposed combination

with Yamaguchi would require modifying Kim to operate in an unintended manner to produce subjective data. Claim 13 is patentable over the proposed combination of Kim and Yamaguchi.

New claim 23 depends from claim 1 and is patentable over Kim and Yamaguchi for at least the same reasons as those advanced above for claim 1. New claim 24 depends directly from claim 13 and is patentable over Kim and Yamaguchi for at least the same reasons as those advanced above for claim 13.

In view of the above remarks and amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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